The rapidly evolving Cyber Threat Landscape

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1. The policy challenges presented by cyberspace are not solely technological in nature. The cyber domain is a human-made environment and is fundamentally shaped by human behaviour. It amplifies such behaviours for better or worse, the impacts of which are usually also felt in the physical world. Cyberspace is owned and operated by private companies, governments, non-profit organisations, individual citizens and even criminals. This means that any strategic response to this context must link geostrategy and national security, criminal justice and civil regulation, economic and industrial policy and requires a deep understanding of the different cultural or social contexts and value systems interacting online.

2. Cyberspace also transcends national borders. Technology supply chains and critical dependencies are increasingly global, cyber criminals and state-based actors operate from around the world, powerful technology companies export products and set their standards, and the rules and norms governing cyberspace and the internet are decided in international fora. Cyberspace is also continually evolving as technology and the ways people use it change, requiring us to adopt an agile and responsive approach.

What is cyberspace?

To many of us, cyberspace is the virtual world we experience when we go online to communicate, work and conduct everyday tasks. In technical terms, cyberspace is the interdependent network of information technology that includes the internet, telecommunications networks, computer systems and internet-connected devices. For the military, and when considering our efforts to counter threats in cyberspace, it is an

operational domain, along with land, sea, air and space.

How is cyberspace experienced?

Cyberspace is, by definition, a ‘shared’ space and its scale and complexity means that every person’s experience of it is unique. Citizens access cyberspace when they check their bank accounts online or stream a film at home. Businesses use cyberspace to connect their staff with the resources they need, whether this is access to information or control over a manufacturing process. Governments provide public services to their citizens using online portals. Cyber professionals look ‘under the hood’ at the technology, standards and protocols that make it all ‘just work’ for users. All these groups use cyberspace in different ways and for different purposes, and we are all making an ever-greater use of it.

Cyberspace can be described in terms of three layers:

Virtual

The part of cyberspace most people experience. It consists of representations of people and organisations through a virtual identity
in a shared virtual space. Virtual representations could be an email address, user identification, a social media account or an alias.
One person or one organisation can have multiple identities online.
Conversely, multiple people or organisations could also create just a single, shared identity.

Logical

The part of cyberspace made up of code or data, such as operating systems, protocols, applications and other software.
The logical layer cannot function without the physical layer and information flows through wired networks or the electromagnetic spectrum. The logical layer, along with the physical layer, allows virtual identities to communicate and act.

Physical

The physical layer of cyberspace includes all the hardware on which data is transmitted, from the routers, wires and hubs that you have in your home, to large complex telecommunications systems operated
by big tech companies. As well as physical infrastructure it includes the electromagnetic spectrum on which data is transmitted, such as
WiFi and radio.

Cyber attacks can have devastating consequences for both companies and their customers. Network compromise can lead to unauthorized access to and theft of both business and customer data. In 2022 in the US alone, there were 1,802 recorded data compromises, with 422.14 million people affected by said compromises.

Manage cyber
security risk

1. In order to manage cyber security risk, government organisations must be able to identify, assess and understand them. The foundation of this lies in the visibility and understanding of assets, their vulnerabilities, and the threat to them - whether internal to an organisation or emanating from its supply chain. Clear accountability and robust assurance will ensure that risk owners are aware of the risks they have the responsibility to manage, and that they are doing so appropriately.

2. Information about vulnerabilities must be shared across governments to provide a central view of critical vulnerabilities that will enable cross-government risks to be identified and managed, facilitating rapid assessment, coordination and mitigation at scale.

Protect against cyber attack

1. The protective stance of individual government organisations will be inextricably linked to their assessment and management of risk. While it will never be possible to protect against all attacks, those accountable must be able to demonstrate that they have appropriately considered those risks and responded accordingly.

2. Proportionate cyber security measures must be embedded in the technology government uses, and technology and digital services will be correctly designed, configured and managed. Crucially, governments must develop its shared capabilities, tools and services to address common cyber security issues at scale, improving cyber security across the whole of government as well as driving efficiency and value for money.

3.At the heart of any government's responsibility must be to protect the data it handles. As well as appropriately classifying information, governments must handle and share it in a way that is commensurate with the risks it presents, using the appropriate IT Systems.

Detect cyber security events

1. Building on the foundation of risk management and commensurate protective measures, governments must develop its capability to detect cyber security events across every part of its estate to ensure that risks can be mitigated before they critically impact government functions and services.

2. This means having the capability to monitor systems, networks and services to detect cyber security events before they become incidents. Enhanced coordination will enable governments to have the agility to use these data inputs to detect at pace and scale, facilitating coherent responses as well as providing the capabilities to detect more sophisticated attacks.

Minimise the impact of cyber security incidents

1. While effective risk management, appropriate and proportionate protective measures and enhanced detection capability will make governments a considerably hardened target, government organisations will still be impacted by cyber security incidents.

2. Governments must therefore be fully prepared and able to respond to cyber incidents with the capability to restore affected systems and assets and resume the operation of its functions and services with minimal disruption. A critical component of this will be establishing the mechanisms to test and exercise incident response plans, both organisationally and across government, as well as the ability to learn lessons from incidents and ‘near misses’.

Cyber Critical Infrastructure | Nuclear impingement

CCI | Nuclear Reimagined

https://m.youtube.com/watch?v=k8p1TWDOrro

CCI Infra - Nuclear Landscape | NCAM 2022

https://m.youtube.com/watch?v=HaqMrekBqsQ

Role of Dynamic Multidimensional Security Approach Zero Trust Network Access on Critical Infrastructure.

https://m.youtube.com/watch?v=vmp-c8ActI8

Cyber Attacks on Critical Infrastructure | NATO

https://easytech4all.net/2021/10/01/cyberattacks-critical-infrastructure-nato/

Zero Trust Architectured Networks - US Cybersecurity and Infrastructure Security Agency . Department of Homeland Security

https://easytech4all.net/2021/10/10/zero-trust-architectured-networks-advanced-cyber-threat-intelligence/

US Intelligence and National Security Alliance

Protecting Critical Infrastructure: Key Elements of the New National Cybersecurity Strategy

Tuesday, May 2 | 1:00 - 2:30 PM ET | Virtual - two-part program!

Panelists:

Brian Scott, Deputy Assistant National Cyber Director for Cyber Policy and Programs, Office of the National Cyber Director, Executive Office of the President

Speaker from CISA (Invited)

Chris Boyer, Executive Committee Member, Communications Sector Coordinating Council, and VP, Global Security and Technology Policy, AT&T

Amanda Craig, Executive Committee Member, IT Sector Coordinating Council and Senior Director, Global Cybersecurity Policy, Microsoft

Matthew Eggers, VP for Cybersecurity Policy, U.S. Chamber of Commerce

https://insaonline.us8.list-manage.com/track/click?u=2bbe7114be6cc1ae543a8f374&id=4f659e75a0&e=d386303ff8

Cyber Council - New White Paper

Industry Contributions to Offensive Cyber Operations, outlines the importance of public/private collaboration in cybersecurity and provides five key recommendations that can help strengthen U.S. critical infrastructure.

https://insaonline.us8.list-manage.com/track/click?u=2bbe7114be6cc1ae543a8f374&id=aa1dc2fed6&e=d386303ff8

Key Highlights of
Google Cloud Security - 2023 Outlook

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-1

Frontline Threat Intel Panel

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-2

Cyber Crime Metamorphosis: A Case Study Examining How Criminals Adapt to Chaos

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-3

Managing Open Source Software Security

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-4

DDoS Trends at US Elections and What's New with Cloud Armor

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-5

Defeating Cryptomining Attacks with Native Security Controls

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-6

Cloud Detection & Response Survey: Challenges and Insights

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-7

Office of the CISO
RESOURCES

Improve Decision Making with Automated Contextual Awareness

https://cloudonair.withgoogle.com/events/2023-emea-security-talks?talk=na-talk-8

Quick recap of Global Cyber Threat Intelligence brainstorms (2019-2022) by https://1Power.substack.com and https://easytech4all.net

US Federal Agencies. Security Organisations
US Cyber Command.NSA.US Dept of Homeland Security.Department of Defense . Secret Service CID. CISA.FBI

https://easytech4all.net/cyber-conference/

https://1powercyber.blogspot.com/2022/05/us-cybersecurity-global-conference.html?utm_source=pocket_mylist

UN Security Council Cyber Threats Debate -

https://easytech4all.net/2022/03/06/un-security-council-cyberthreats-debate/

UNIDIR Cyber Stability Conference 2021 & AI Disruption Peace Security (innovations dialogue) 2022

https://easytech4all.net/2022/07/05/unidir-cyber-stability-conference-3rd-december-friday-2021/

https://1powercyber.substack.com/p/unidir-cyber-stability-conference

Importance of Information and Communication technologies .

https://easytech4all.net/2022/02/05/unidir-ict-information-communication-technologies/

NATO Locked Shields 2022

https://1powercyber.substack.com/p/nato-locked-shields-2022?utm_source=pocket_mylist

Cyber Polygon with World Economic Forum and INTERPOL

https://easytech4all.net/2022/01/16/cyber-polygon-2020-2021-and-2022/

https://1powercyber.substack.com/p/wef-and-interpol-cybersecurity-mega?utm_source=pocket_mylist

White House National Cybersecurity Strategy

https://www.csoonline.com/article/3689911/white-house-releases-an-ambitious-national-cybersecurity-strategy.html

Countering Ransomware with Department of Homeland Security , Cybersecurity and infrastructure Security Agency , Federal Bureau of Investigation , SecretService Criminal Investigation Department

https://easytech4all.net/2021/05/09/nownext-countering-ransomware-attacks/

Cyber Essentials by Cybersecurity and Infrastructure Security Agency and Department of Homeland Security.

https://easytech4all.net/cyber-essentials-us-dhs/

Ransomware Attackers Defenders - FBI's perspective

https://easytech4all.net/ransomware-attackers-defenders-fbis-perspective/

US Cyberspace Solarium Commission

https://easytech4all.net/2022/04/10/us-cyberspace-solarium-commission/

UK Cybersecurity Association with Digital Police Center.

https://easytech4all.net/uk-cybersecurity-association-1-day-summit/

Fourth Annual Cybersecurity Summit by Cybersecurity and Infrastructure Security Agency .

https://easytech4all.net/2022/02/07/4th-annual-national-cybersecurity-summit-by-cisa/

Fourth CEO Summit - USA

https://easytech4all.net/2022/06/27/iv-ceo-summit-of-the-americas/

State of American Business 2023

https://easytech4all.net/state-of-american-business-2023/?utm_source=pocket_mylist

Challenges faced by Government and international LAW Enforcement

https://easytech4all.net/2021/10/06/watch-challenges-faced-by-govt-and-int-law-enforcement-cybersec-on-youtube/

Intelligence and National Security Alliance (INSA) 2022 UPDATE

https://easytech4all.net/future-of-intelligence-community-workforce/

What is Advanced Cyber Threat Intelligence ?

https://easytech4all.net/2020/09/20/what-is-advanced-cyber-threat-intelligence/

Accreditations Webinars LMS - Cybersec CTI

https://easytech4all.net/2020/12/29/cybersec-accreditation-nanocertifications/

Google Cloud Security Summit with Chris Inglis (National Cyber Director , Executive office of the US President)

https://1powercyber.substack.com/p/google-cloud-security-summit-with

Security information and event management (SIEM) is a field within the field of computer security, where software products and services combine security information management (SIM) and security event management (SEM). They provide real-time analysis of security alerts generated by applications and network hardware. Vendors sell SIEM as software, as appliances, or as managed services; these products are also used

to log security data and generate reports for compliance purposes. The term and the initialism SIEM was coined by Mark Nicolett and Amrit Williams of Gartner in 2005.

https://1powercyber.substack.com/p/security-information-and-event-management?utm_source=pocket_mylist

Zero Trust Architectured Networks by Cybersecurity and Infrastructure Security Agency

https://easytech4all.net/2021/10/10/zero-trust-architectured-networks-advanced-cyber-threat-intelligence/

1PowerCyber and Easytech4all Global CTI Research & Analysis.

https://easytech4all.net/internet-ranking-advanced-cyber-threat-intelligence/

https://easytech4all.net/2021/02/21/easytech4all-ranking-for-advanced-cyber-threat-intelligence/

https://easytech4all.net/2020/12/30/3452-best-cybersecurity-stories-by-easytech4all-on-flipboard-quick-updates/

Mapping Global CTI Landscape and Visual Trends

https://easytech4all.net/2021/02/14/mapping-global-ranking-for-advanced-cyber-threat-intelligence/

International Cyber Threat Intelligence Brainstorms

https://easytech4all.net/1-power-cybersec-cti-brainstorms/

Safe and Secure Digital Ecosystem for Schools by US Department of Homeland Security and Department of Justice

https://easytech4all.net/2022/04/10/safe-and-secure-digital-ecosystems-for-students/

Global Cyber Threat Landscape

https://easytech4all.net/cyber-threat-intelligence-landscape/

https://easytech4all.net/cyberwar-ww3-flashpoint/

CyberKinetic and 5G

https://1powercyber.blogspot.com/2022/05/cyber-kinetic-world-war-3-and-5g-in.html?utm_source=pocket_mylist

https://1powercyber.substack.com/p/cyber-kinetic-warfare?utm_source=pocket_mylist

Cyber Independence and Freedom

https://easytech4all.net/2021/08/14/cyber-independence-freedom/

Cyberattacks and Critical Infrastructure (Reading & Resources)

https://easytech4all.net/2021/10/01/cyberattacks-critical-infrastructure-nato/

Space Threats and Satellite Navigation Systems

https://easytech4all.net/2022/03/06/threats-to-satellite-navigation-system-conflict-in-space/

https://1powercyber.substack.com/p/space-threats-satellite-navigation?utm_source=pocket_mylist

Comsec Protocols and Paradigms

https://1powercyber.substack.com/p/comsec-protocols-and-paradigms?utm_source=pocket_mylist

Advanced Cyber Threat Intelligence Landscape and Updates via Digital Magazine by 1PowerCyber for Easytech4all.net

https://bit.ly/3P8gCTT

Advanced Cyber Threat Intelligence Research Analysis Assessment and Projections . Video Playlist .

https://bit.ly/3yqDEje

Advanced Cyber Defense Threat Intelligence Blog in Progress

https://easytech4all.net/author/easytechonline/

https://1powercyber.substack.com

https://1powercyber.blogspot.com

https://easytech4all.tumblr.com/

https://medium.com/@1PowerCyber

References

Clarke R.A, K. R. (2010). Cyber war: the next threat to national. eCCO.

Clarke, R. (2011). Cyber War: The Next Threat to National Security and What to Do About It. Harper Collins.

Cybersecurity and Infrastructure Agency. (2021, October 15). CISA HOME. Retrieved October 14, 2021, from https://www.cisa.gov/about-cisa

Gazula, M. B. (2017). Cyber Warfare Conflict Analysis and Case Studies. Massachusetts Institute of Technology .

Jeremy Rabkin, A. R. (2016). Hacking Back Without Cracking Up. Aegis Paper Series No. 1606.

Kukuh Ugie Sembodho, A. T. (2021). The Limitation of United States Deterrence Strategy Towards North Korean Cyber . Global Strategis, p. 150.

Libicki, M. (2009). Cyberdeterrence and cyberwar. Santa Monica: The Rand Corporation.

M, T. (2012). An analysis for a just cyber warfare in Cyber Conflict (CY-CON). , 2012 4th International Conference on,, (pp. 1-10).

National Security Agency. (2021, October

14). NSA Home.

Parks R, D. D. (2011). Principles of cyberwarfare, security privacy. IEEE, 30-35.

Rid, T. (2012, March). Think Again: Cyberwar. Foreign Policy , pp. 80-84.

Sanger, D. (n.d.). The Perfect Weapon: War, Sabatoge, and Fear in the Cyber Age. New York: Crown Publishers.

Schmitt, M. (2014). The Law of Cyber Warfare: Quo Vadis? Stanford Law & Policy Review, 269-270.

Tallin Mannual. (2017). Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations.

The White House. (2011, April). National Strategy for Trusted Identities in

Cyberspace.

The White House. (2021). Improving the Nation’s Cybersecurity. Federal Register Vol. 86.

Trautman, L. J. (2016, April). Cybersecurity: What About US Policy? Journal of Law, Technology & Policy, p. 344.

US Cyber Command. (2021). US Cyber Command Mission. Retrieved from https://www.cybercom.mil/About/Mission-and-Vision/